IN THE CLAIMS

Claim 1-15 (canceled)

16. (currently amended) A process for reducing the surface reflectance of polymer substrates to less than 2% in the wavelength range from 400 nm to 1100 nm with formation of a refractive index gradient layer by means of ion bombardment using high-energy ions which are generated by means of an ~~argon/oxygen~~ argon and oxygen plasma as plasma ion source, where the ions impacting at least one substrate surface during the ion bombardment have an energy of from 100 eV to 160 eV, and the duration of the ion bombardment is from 200 to 600 s, and the ion bombardment is carried out until a refractive index gradient layer with a thickness of at least 230 nm has been formed.

17. (previously presented) The process as claimed in claim 16, wherein the process reduces the surface reflectance to less than 1.5% in the wavelength range from 420 nm to 860 nm.

18. (previously presented) The process as claimed in claim 16, wherein the ions impacting the substrate during the ion bombardment have an energy of from 120 to 140 eV.

19. (previously presented) The process as claimed in claim 16, wherein the duration of the ion bombardment is from 250 to 350 s.

20. (previously presented) The process as claimed in claim 16, wherein the plasma ion source is operated with at least 30 sccm of oxygen.

21. (previously presented) The process as claimed in claim 16, wherein the ion bombardment is carried out at a pressure of about $3*10^{-4}$ mbar.

22. (previously presented) The process as claimed in claim 16, wherein the polymer substrates are selected from the group consisting of: polymethyl methacrylates (PMMA), methyl-methacrylate-containing polymers, and diethylene glycol bisallyl carbonate (CR39).

23. (previously presented) The process as claimed in claim 22, wherein the polymer substrate comprises polymethyl methacrylate (PMMA), the ions impacting the substrate during the ion bombardment have an energy of from 100 eV to 160 eV, and the duration of the ion bombardment is from 200 to 400 s.

24. (previously presented) The process as claimed in claim 23, wherein the ions impacting the substrate during the ion bombardment have an energy from 120 to 140 eV, and the duration of the ion bombardment is for 250 to 350 s.

25. (currently amended) The process as claimed in claim 22, wherein the polymer substrate comprises diethylene glycol bisallyl carbonate, the ions impacting the substrate during the ion bombardment have an energy of ~~at least~~ between 120 eV and 160eV, and the duration of the ion bombardment is at least 500 s.

26. (currently amended) The process as claimed in claim 25, wherein the ions impacting the substrate during the ion bombardment have an energy of ~~at least~~ between 150 eV and 160eV.

27. (previously presented) A surface-modified substrate comprising a polymer treated by the process as claimed in claim 16.

28. (previously presented) The surface-modified substrate according to claim 27, wherein the polymer is selected from the group consisting of polymethyl methacrylate (PMMA), methyl-methacrylate-containing polymers, or diethylene glycol bisallyl carbonate (CR39).

29. (canceled)

30. (canceled)

31. (previously presented) The surface-modified substrate as claimed in claim 28, comprising a polymethyl methacrylate substrate which is modified on one side and has a transmittance of at least 95%.

32. (previously presented) The surface-modified substrate as claimed in claim 28, comprising a polymethyl methacrylate substrate which is modified on both sides and has a transmittance of at least 97% in the wavelength range from 400 nm to 1100 nm.

33. (previously presented) Utilizing the method of claim 16 for reducing the reflection of optical elements.